

WHAT IS CLAIMED IS:

5

1. A method of connecting a line
concentrator to other line concentrators in a
switching system, wherein a switching unit
accommodates said line concentrator, said method
10 comprising the steps of:
analyzing a call received by said
switching unit through said line concentrator; and
connecting lines that are accommodated by
said line concentrator and are connected to the
15 other line concentrators without connecting through
said switching unit when said call is detected to be
made between said line concentrator and the other
line concentrators.

20

2. The method as claimed in claim 1,
further comprising the steps of:
25 checking a condition of a communication
path provided between said line concentrator and
said switching unit; and
transmitting an overcrowding-process
signal from said line concentrator to said switching
30 unit through a signal path when the communication
path is overcrowded,
wherein said line concentrator is
connected to the other line concentrators without
connecting through said switching unit when said
35 switching unit receives the overcrowding-process
signal from said line concentrator.

09767327 012301

3. A switching system including a switching unit and a line concentrator,

said switching unit comprising:

5 a number-analyzing unit that analyzes a dial number notified through said line concentrator; and

a line-selecting unit that selects lines that are accommodated by said line concentrator and are connected to other line concentrators, and

10 said line concentrator comprising a line-connecting unit that connects said lines,

wherein said line-selecting unit selects the lines and directs said line-connecting unit to connect said lines together when said number-analyzing unit determines that said dial number is
15 used for connecting said line concentrator to the other line concentrators, thereby connecting said line concentrator to the other line concentrators.

20

4. The switching system as claimed in claim 3, wherein said line concentrator further
25 comprises a signal-transmitting unit transmitting an overcrowding-process signal through a signal path to said switching unit when a communication path provided between said line concentrator and said switching unit is determined to be overcrowded,
30 wherein said switching unit further comprises a signal-receiving unit receiving the overcrowding-process signal from said signal-transmitting unit, and an overcrowding-control unit directing said line-connecting unit to connect said lines when said
35 signal-receiving unit receives the overcrowding-process signal from said signal-transmitting unit, thereby connecting said line concentrator to the

09767327 012301

other line concentrators.

5

5. The switching system as claimed in claim 3, wherein said switching unit further comprises a number-analysis table including trunk-group numbers initially registered for dial numbers that are used for connecting the line concentrator to the other line concentrators, and a line-selection table including a chain of idle trunks corresponding to a trunk-group number selected from said number-analysis table by said number-analyzing unit by use of said dial number and to a line-concentrator number of the line concentrator accessed by said dial number, wherein said line-selecting unit selects an idle trunk connecting said lines from said line-selection table by use of said trunk-group number and said line-concentrator number.

25

6. The switching system as claimed in claim 4, wherein said switching unit further comprises a line-selecting data table including initially registered trunk-group numbers of trunks used for connecting the line concentrator to the other line concentrators by connecting the lines when the communication path provided between said line concentrator and said switching unit is determined to be overcrowded, and a line-selection table including a chain of idle trunks corresponding to a trunk-group number selected from said line-selecting data table by said overcrowding-control unit and to a line-concentrator number of said line

09767327-012301

concentrator connected through an overcrowded
communication path to said switching unit, wherein
said overcrowding-control unit selects an idle trunk
connecting said lines from said line-selection table
5 by use of said trunk-group number and said line-
concentrator number.

09767327.012301